

**Docket No.: 03-20 US****REMARKS**

This Amendment responds to the Office Action mailed August 21, 2006, in the above-identified application. Based on the foregoing amendments and the following comments, reconsideration and allowance of the application are respectfully requested.

As a preliminary matter, it is unclear whether the Examiner considered the claims which were included in the Preliminary Amendment filed with the U.S. National Phase application on February 10, 2005. In the Preliminary Amendment, substitute pages were presented in which original claims 1, 10 and 18 were amended and original claim 7 was canceled. In addition, original claims 8-19 were renumbered as claims 7-18, respectively. The amended claims filed in the Preliminary Amendment are listed above. In the amended claims, claims 1-18 are pending for examination, with claims 1 and 9 being independent claims. Claims 1 and 9 are currently amended.

The Examiner has objected to claim 7 under 37 C.F.R. § 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Assuming that the Examiner is referring to original claim 7, Applicant notes that original claim 7 is canceled in the claims as set forth above.

The Examiner has rejected claims 1, 2, 4-7 and 9-18 under 35 U.S.C. § 103(a) as unpatentable over Bohm et al (US 5,661,229) in view of Baret et al. (US 6,014,892). Claim 3 is rejected under 35 U.S.C. § 103(a) as unpatentable over Bohm et al. and Baret et al. as applied to claim 1, further in view of Spies (US 3,280,619). The rejections are respectfully traversed in view of the amended claims.

Bohm discloses a leak detector which utilizes a diaphragm that can be a polymer or a thin heated quartz glass window (Col. 2, lines 53-57). An ionization gauge detects helium that passes through the diaphragm. An inlet 1 to the leak detector is connected through a valve 3 to a vacuum pump 4 (Figs. 1 and 3). In Fig. 1 of Bohm, a valve 10 is connected between line 2 and test gas detector 5.

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Baret discloses a trace gas leak detector, as shown in Fig. 4, which includes a mass spectrometer 1, a secondary pump 2, a primary pump 3, an enclosure 16 and an intermediate volume 18. Inlet 6 is coupled from enclosure 16 through intermediate volume 18 and pipe 7 to the suction inlet of primary pump 3. A sampling member 11 is positioned between valve 8 and intermediate volume 18 and is connected via duct 12 and a valve 15 to mass spectrometer 1.

Amended claim 1 is directed to apparatus for leak detection and requires a sealable chamber configured to receive a test piece, a trace gas permeable member mounted in gas communication with the chamber, and a trace gas sensor comprising an ion pump in gas communication with the permeable member, the sealable chamber being isolated, during leak detection by the ion pump, from gas communication with a vacuum pumping device other than the trace gas sensor. As stated in the subject application, the claimed leak detection apparatus detects a helium leak but does not pump the helium away, so leaks are detected more accurately, more reliably, and with more sensitivity than with prior art methods.

Bohm, by contrast, discloses a test gas detector wherein vacuum pump 4 is connected during leak detection to the inlet of the leak detector. Although inlet 1 *can* be isolated from vacuum pump 4 by valve 3 in Bohm, valves 3 and 10 *must be open* in order to perform a leak test. Under these conditions, both the test gas detector 5 and the vacuum pump 4 are in gas communication with inlet 1, and the disadvantages described in the present application are present. Thus, Bohm does not teach or suggest “the sealable chamber being isolated, during leak detection by the ion pump, from gas communication with a vacuum pumping device other than the trace gas sensor”, as required by amended claim 1. Baret does not provide the teachings that are lacking in Bohm. In particular, Baret does not describe a leak detector which utilizes an ion pump and does not describe a leak detector wherein a sealable chamber is isolated, during leak detection by the ion pump, from gas communication with a vacuum pumping device other than the trace gas sensor. For these reasons, amended claim 1 is clearly and patentably distinguished over Bohm in view of Baret, and withdrawal of the rejection is respectfully requested.

Claims 2-8 depend from claim 1 and are patentable over Bohm in view of Baret for at least the same reasons as claim 1.

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Amended claim 9 is directed to a method for leak detection comprising, in part, providing a sealable chamber, a trace gas permeable member in gas communication with the chamber and a trace gas sensor comprising an ion pump in gas communication with the permeable member, wherein the sealable chamber is isolated, during leak detection by the ion pump, from gas communication with a vacuum pumping device other than the trace gas sensor.

As discussed above in connection with claim 1, Bohm does not disclose or suggest a leak detector wherein a sealable chamber is isolated, during leak detection by the ion pump, from gas communication with a vacuum pumping device other than the trace gas sensor. Baret does not provide the teachings that are lacking in Bohm. For these reasons and for the reasons discussed above in connection with claim 1, claim 9 is clearly and patentably distinguished over Bohm in view of Baret, and withdrawal of the rejection is respectfully requested.

Claims 10-18 depend from claim 9 and are patentable over Bohm in view of Baret for at least the same reasons as claims 1 and 9.

Based upon the above discussion, claims 1-18 are in condition for allowance.

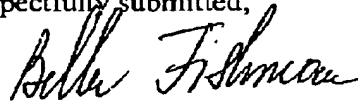
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CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Varian, Inc. Deposit Account No. 50-0895.

Respectfully submitted,



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